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Published on *Center for Public Integrity* (https://www.publicintegrity.org)

DSL providers save faster internet for wealthier communities

[1]

Noncable internet providers offer broadband speed to just 22 percent of the population in poor areas

By Allan Holmes [2] and Ben Wieder [3]

October 14, 2016

When noncable internet providers — outlets like AT&T or Verizon — choose which communities to offer the fastest connections, they don't juice up their networks so everyone in their service areas has the option of buying quicker speeds. Instead, they tend to favor the wealthy over the poor, according to an investigation by the Center for Public Integrity.

The Center's data analysis found that the largest noncable internet providers collectively offer faster speeds to about 40 percent of the population they serve nationwide in wealthy areas compared with just 22 percent of the population in poor areas. That leaves tens of millions of Americans with the choice of either purchasing an expensive connection from the only provider in their area, typically a cable company, or just doing the best they can with slower speeds. Middle-income areas don't fare much better, with a bit more than 27 percent of the population having access to a DSL provider's fastest speeds. The Center reached its conclusions by merging the latest Federal Communications Commission data with income information from the U.S. Census Bureau.

The FCC, which regulates the industry, defines broadband as a download speed of at least 25 megabits per second. Those speeds are mostly only available through wired connections to the home. It's the speed that the agency believes is needed to support multiple devices on a single connection, stream uninterrupted movies and educational videos, upload photos, and allow for future applications such as in-home health services and networked homes.

The noncable internet providers — the four largest are AT&T Inc., Verizon Communications Inc., CenturyLink Inc. and Frontier Communications Corp. — hook up customers over telephone wires that are Digital Subscriber Lines (DSL), or use hybrid networks that include some fiber connections near, or sometimes directly to, homes. The Center included all types of connection in its analysis. These companies account for nearly 40 percent of the 92 million internet connections nationwide.

Cable companies, such as Comcast Corp. and Charter Communications Inc., operate under a different set of conditions. These providers offer the same fast speeds to almost every community they serve, in part because of franchise agreements with local governments. But a previous Center investigation [4] and other reports [5] have shown that cable firms sometimes avoid lower-income or hard-to-reach areas based on how franchise agreements are written. Poor areas *not* served by the cable companies are not included in the Center's analysis, which results in what seems like an equitable distribution of speeds across income levels.

In addition, internet speeds sent over coaxial cable used by the cable firms don't degrade over long distances as they do over copper telephone lines. That means that in order to keep speeds from

slowing, DSL carriers must make costly investments in equipment, including fiber cable in some places.

It would seem DSL providers' coverage decisions are simply smart business. After all, the companies and economists say, providers must invest millions of dollars in equipment to boost speeds over relatively short distances in their service areas. The best way to get a substantive return on investment is to provide the service in wealthier areas. Besides, fewer [6] lower income households purchase a home internet connection than do their higher income neighbors.

But broadband advocates [7], economists — those in the United States [8], Europe [9] and the White House [10] — as well as the FCC [11] argue that a *fast* internet connection is now so crucial to managing daily life and seizing opportunities for advancement that it's an economic necessity for households and communities. And they further argue that having a choice between two providers is essential to keeping prices down.

"Society said it did not matter if you could pay for electricity — we wanted everyone to have it. Society said we would not limit dial tone to those who could pay the most, we gave it to all," said telecommunications lawyer Gerard Lederer of Best Best & Krieger LLC in Washington, D.C., in an email. "Broadband is quickly becoming that utility, and if applications only work at high speeds, then the universal availability of that speed must be the goal, otherwise you are providing everyone with water, just some of the water is not drinkable."

Where the high speeds are

High-speed connections will only become *more* important for Americans. As families simultaneously use more than one connected device at home, and tools like health-care apps become more prevalent, and cars and household appliances become networked, broadband demand is forecast to more than double [12] in just the next four years. The increased internet traffic will require ever faster speeds to allow applications to work.

That's why [13] the FCC voted last year to increase the definition of broadband from a download speed of 4 Mbps and 1 Mbps upload to 25 Mbps down and 3 Mbps up. The Center's analysis looked at the availability of just download speeds, using the FCC's 25 Mbps definition for broadband.

But the opportunity to purchase the higher speeds or choose between two high-speed providers is unequal, determined in large part by a family's earnings, the Center's analysis shows. Without exception, the nation's four-largest noncable internet providers offer their highest speeds to more wealthy communities than lower-income ones.

An earlier Center investigation [4] found that people living in the poorest areas nationwide — where median household incomes are less than $34,800 — are five times more likely *not* to have access to broadband than households in the wealthiest areas — where the median income is more than $80,700. Many times, the Center found, high-speed internet service stops at the edge of low-income communities.

In this analysis, the Center drilled down into the data to learn how providers manage speeds *within their service areas* and which carriers offer service equally across income. The findings: DSL providers in particular favor the wealthy over lower-income communities in providing their fastest speeds.

Frontier Communications, the nation's fourth-largest DSL internet provider, favors its wealthy communities more than most. The Norwalk, Connecticut-based firm offers high-speed broadband to 38 percent of the population in the wealthiest communities, those with the median household incomes of more than $80,700, according to the Center's analysis. But Frontier only offers its fastest

speeds to 11 percent of the people living in areas where the median household income is less than $34,800.

AT&T, the nation's largest DSL provider, offers speeds at 25 Mbps and higher to about the same proportion of wealthy, middle- and low-income areas. But those speeds are available to just a little more than 5 percent of the population its national service area, which covers about 6.6 million people out of a total of 123 million people AT&T's service area covers, according to the Center's analysis. The vast majority of the population in the communities AT&T serves — 72 percent — have access to sub-broadband speeds, between 10 and 24 Mbps. Who has access to those speeds varies greatly by income. More than 82 percent of the people living in the wealthiest areas can buy those speeds, while 66 percent of the people in the poorest communities can, the Center's investigation found.

Low-income regions are not the only ones that have less chance to buy fast download speeds. Some DSL providers ignore middle-income areas at nearly the same rates. Verizon provides broadband speeds to 64 percent of the population in wealthy communities where it has service, but only to 49 percent of the population in the middle-income areas, those with a household median income between $46,900 and $60,200.

AT&T, Verizon and Frontier did not reply to requests for comment.

CenturyLink's track record is similar. The Monroe, Louisiana-based company, which has almost 6 million subscribers nationwide, offers broadband to 72 percent of people living in wealthy areas in which it operates compared with 57 percent of the population in the middle-income communities — just 3.5 percentage points more than in the company's poorest areas.

CenturyLink denies the unequal access is purposeful.

"CenturyLink does not engage in discriminatory practices in broadband deployment," a CenturyLink spokeswoman said in an email. "We focus our network investments in a fiscally responsible manner by investing in areas that allow us to take advantage of current assets, such as existing conduit and fiber routes, while reaching the largest number of potential customers."

But that is exactly the problem, said Hannah Sassaman, policy director at the Media Mobilizing Project, a community organizer and support group for low-income families in Philadelphia.

"It's fine for an incumbent to say they want to leverage their existing assets, but we have to remember that many of these incumbents have been cherry picking what communities they serve for decades," Sassaman said. "Of course companies that want to build where they already have conduit and fiber will be doing so in neighborhoods that already have high-speed access and competition."

And that means in more wealthy neighborhoods, Sassaman said.

The FCC believes its Lifeline program [14], which provides low-cost internet access to qualifying households, will lead to faster internet speeds for lower-income families. But FCC Commissioner Mignon Clyburn acknowledges that more needs to be done.

"There are certainly challenges in bringing communications services to those who can least afford it," Clyburn said in an email. "Regardless, those who are less affluent should not be relegated to receiving second-class broadband."

'We live in an oligarchy'

The Hinebaughs, who live in Washington, Pennsylvania, about 25 miles southwest of Pittsburgh, are one of the many middle-to-lower-income families that don't have access to a fast DSL connection. James, 27, his wife, Jennifer, and their 2- and 4-year-old children live in a 90-year-old, two-story house sitting atop a hill. They're a couple of blocks above Jefferson Avenue, a commercial strip that's home to local businesses like Beck's Tobacco & Beer shop and the Alpine bowling alley.

Here, where the rumble of tractor trailers on Interstate 70 a few hundred feet away resonates through the neighborhood, the median annual income is less than $20,000 and the poverty rate exceeds 16 percent, making it one of the poorest areas in Washington County. James Hinebaugh said his income varies year to year, from the lowest to the middle-income quintiles in the Center's analysis, depending on how much overtime he can get at his job as a machinist at Dynamet Inc., a maker of titanium alloys for aerospace and medical companies.

The only choice the Hinebaughs have for a wired broadband connection is Comcast, and they consider it a 'must have', Hinebaugh said. The children log on to play games, watch educational programs and stream movies. Jennifer Hinebaugh, 31, uses the internet to communicate with family and friends on Facebook, manage the bank account, search for coupons and research health websites for their son, who has special needs. James Hinebaugh goes online to read political news, watch tutorials on painting and research his passion, astronomy. "I'd love to become an astrophysicist one day," he said.

The Hinebaughs pay Comcast $255 a month for a bundled package that provides an actual internet speed of 25 Mbps, cable TV and a networked security system that had previously been installed in the house. The bill is one of the highest they pay and it's a struggle every month, Hinebaugh said. He would like another option, but the only one is Verizon, which offers service in his neighborhood, but at a maximum speed of 3 Mbps, according to a search of Verizon's website. That's on the low end for basic web surfing and email [15], and can't support video streaming or managing other large files such as uploading photos.

At that speed, "you might as well not even have it," Hinebaugh said. "It's so slow that you say, 'I might as well go chop wood.'"

Hinebaugh's situation is similar to nearly half of Americans, who have only one wired broadband provider to choose from, according [16] to the FCC. Another 30 percent have no wired broadband service at all. The lack of competition keeps broadband prices higher, and it hits poorer families harder, according to the FCC.

The Hinebaughs are far from an exception. Verizon provides its fastest speeds to only 1.3 percent of people in the poorest areas where it offers service in Washington County, according to the Center's analysis. Most the people in the poor areas, 87 percent, can hook into 10 to 25 Mbps. Verizon gives its fast broadband speeds to almost all of the population in the wealthiest areas in the county — 92 percent.

But drive about 10 miles east from the Hinebaughs — past the Lindenwood Golf Club, the BMW and Cadillac dealerships on Washington Road and the Youth Ballet School & Company on Valley Brook Road — and it's a world apart. Here, landscaping crews tend the grounds behind large stone gates of multimillion-dollar estates. The median income is $164,000, eight times the income where the Hinebaughs live and the highest in the county.

And there's something else here too. Along these winding tree-lined streets and rolling green pastures, Verizon offers wealthy residents some of its fastest service, up to 150 Mbps over fiber-optic cable, which first came to this part of the county in 2007. Its DSL service in the surrounding areas reaches 15 Mbps, five times the top Verizon speed that's available in the Hinebaughs' neighborhood.

Hinebaugh looks at the speeds Verizon offers just a few miles away and scoffs. He knows that if Verizon offered higher speeds in his neighborhood like it does in the wealthy ones east of him, the competition might push down the price of internet service and save his family some much-needed cash. But he's not holding his breath.

"We live in an oligarchy. That's pretty much how it goes," Hinebaugh said. "It's hard to change something that rich people have spent a lot of money putting in place."

'A big social problem'

Neighborhoods such as the Hinebaughs', where DSL providers such as Verizon and AT&T have chosen not to upgrade download speeds over 3 Mbps, represent an understandable economic decision by providers, said Nicholas Economides, an economist at New York University's Leonard N. Stern School of Business. DSL providers tend to upgrade speeds to more than 3 Mbps in areas where they believe they can sell internet TV, which means they avoid poorer areas they think can't afford the higher speeds, he said.

"That isn't surprising," Economides said.

Economides is more concerned about the *cost* of internet connections, and the lack of competition that leads to higher prices for people like the Hinebaughs, who have just Comcast for high-speed internet because Verizon provides only that meager download speed in their neighborhood. The No. 1 reason cited for not purchasing a home internet connection is by far the high cost [17], according to the Pew Research Center.

"That's a very serious issue, and a big social problem," Economides said. "You need high-speed internet for national reasons, to get information, to get educated. That's just not happening. We still have very high prices."

Verizon got permission to begin building its fiber-optic cable connections in Washington County in late 2007. But the company abandoned [18] expanding its Fios network in 2010. Cities such as New York [19] and Philadelphia [20] have criticized Verizon for not living up to promises to wire the entire cities. Some reports speculate that Verizon may consider expanding its fiber network in several cities, as it recently announced in Boston [21].

But Verizon gives no indication as to whether it will wire poorer neighborhoods. Company officials announced that it will use a free online registration process "to assess demand and help Verizon prioritize its fiber-optic network construction schedule."

Verizon didn't reply to questions about its plans.

AT&T is obligated to bring cheaper internet connections [22] to low-income areas under conditions [23] imposed by the FCC when the company purchased internet-satellite-provider DirecTV last year. The speeds are required to reach 10 Mbps, still below what the FCC defines as broadband. "Many of these communities will see a tremendous leap in terms of speed in the move from dial-up connections to Fixed Wireless Internet," AT&T said [24] on its website.

FCC conditions also require [25] AT&T to deploy fiber to homes in 12.5 million locations nationwide, giving them access to high speeds. But none of the wording in the conditions require the company to connect low-income neighborhoods.

AT&T had been expanding [26] a souped-up version of its AT&T Fiber network, which can deliver speeds up to 100 Mbps, and its gigabit service [27]. AT&T announced last month an experimental network [28] that it says will bring ultra-fast speeds to underserved and rural areas, presumably

including low-income areas. The network won't begin testing until next year and wouldn't be available for years, however.

AT&T didn't respond to requests for comment on the new network.

For Hinebaugh, he said these efforts are too little, too late, leaving him with no hope that his neighborhood will ever get a choice of another high-speed provider.

"Why are the rich entitled to a choice of fast speeds and other people aren't?" Hinebaugh asks. "It's like why even bother trying to change it? Why try to get ahead, because the system is built against you?"

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AUG. 2, 2017 AT 2:00 PM

Lots Of People In Cities Still Can’t Afford Broadband

By Clare Malone

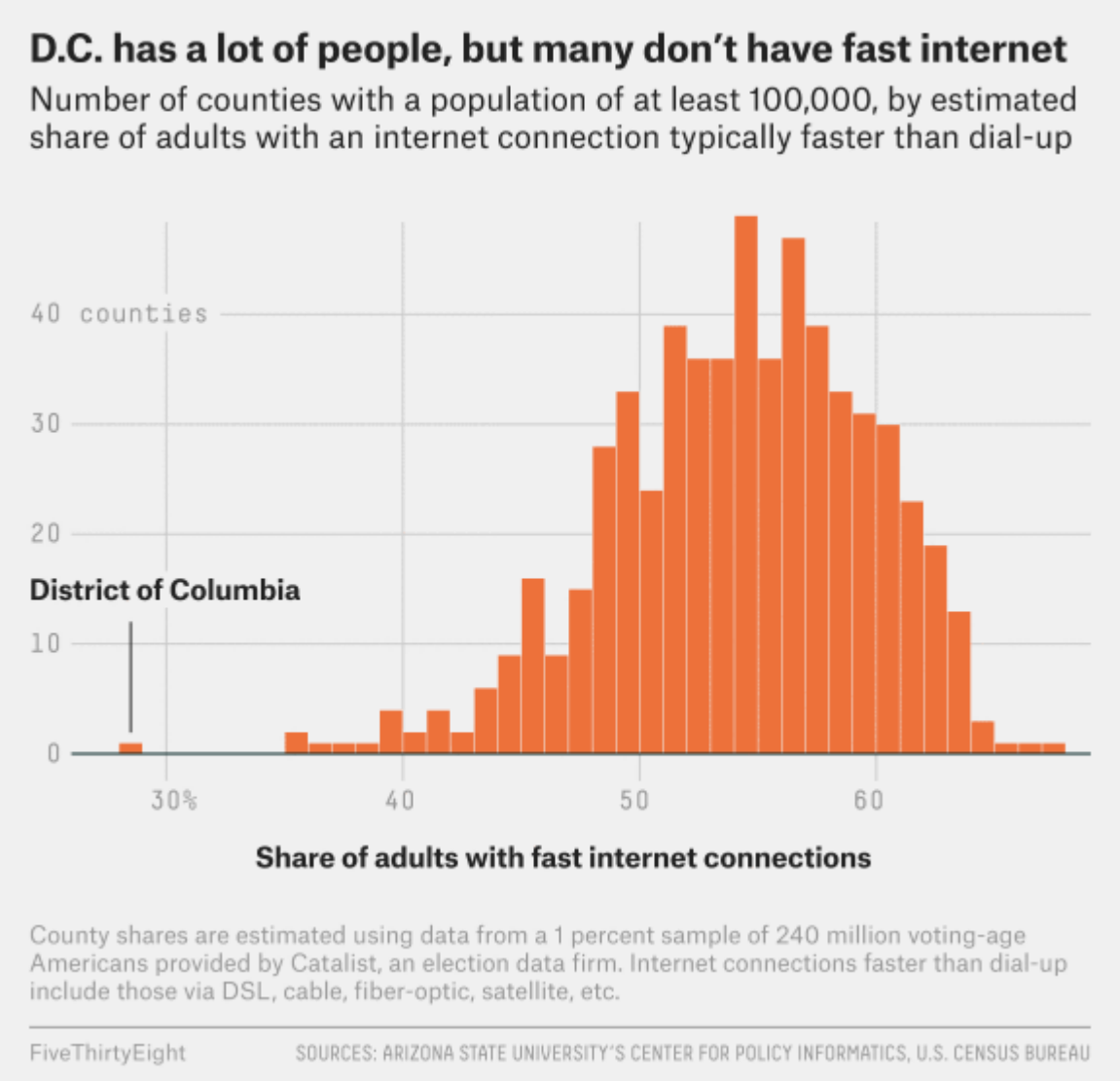
Filed under The Internet

ILLUSTRATION BY BETH STOJKOV

The Washington, D.C., we often hear about is the District of iPhones, the land of news alerts and eyes on screens. It has the highest median income of any metro area in the country, and its suburbs are filled with some of the highest proportions of well-educated people in the nation.

And yet, according to data modeled by researchers from the University of Iowa and Arizona State University, the District of Columbia is the 29th-worst county[1] in the country when it comes to share of adults with home internet faster than dial-up; only 28.8 percent have it.[2] Of the bottom 73 counties, the district is the only one with a large

metropolitan area. The city has a population of around 600,000. The next-largest county in the bottom 73 has only 33,000 people.



Lack of access to fast internet is typically thought of as a rural problem, but many of the country's urban areas make a poor showing in the share of adults with access to fast home internet. The Bronx has only 35.3 percent access, and Manhattan fares only slightly better with 35.6 percent access; Clark County, Nevada, home to Las Vegas, has 39.1 percent access. While rural residents' access might be hindered by their remote location, city residents who don't have broadband often lack it because of income disparity and a dearth of basic knowledge about the internet and computers. Many urban residents, particularly older ones, haven't been exposed to the internet or computers much in their lifetime. And without that knowledge and exposure, a person is likely to be further marginalized in economic and educational opportunities, caught in a cycle of literal and metaphorical disconnection.

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The District of Columbia, well aware of its shortcomings, has developed a “digital inclusion initiative” to bring internet access and computer skills to communities that are often short on funds and access to technology in the home. The Connect.DC initiative works to provide computer courses and subsidize internet access and devices in order to bridge a divide that many worry holds back a skills-based economy and diminishes the opportunities of significant parts of society.

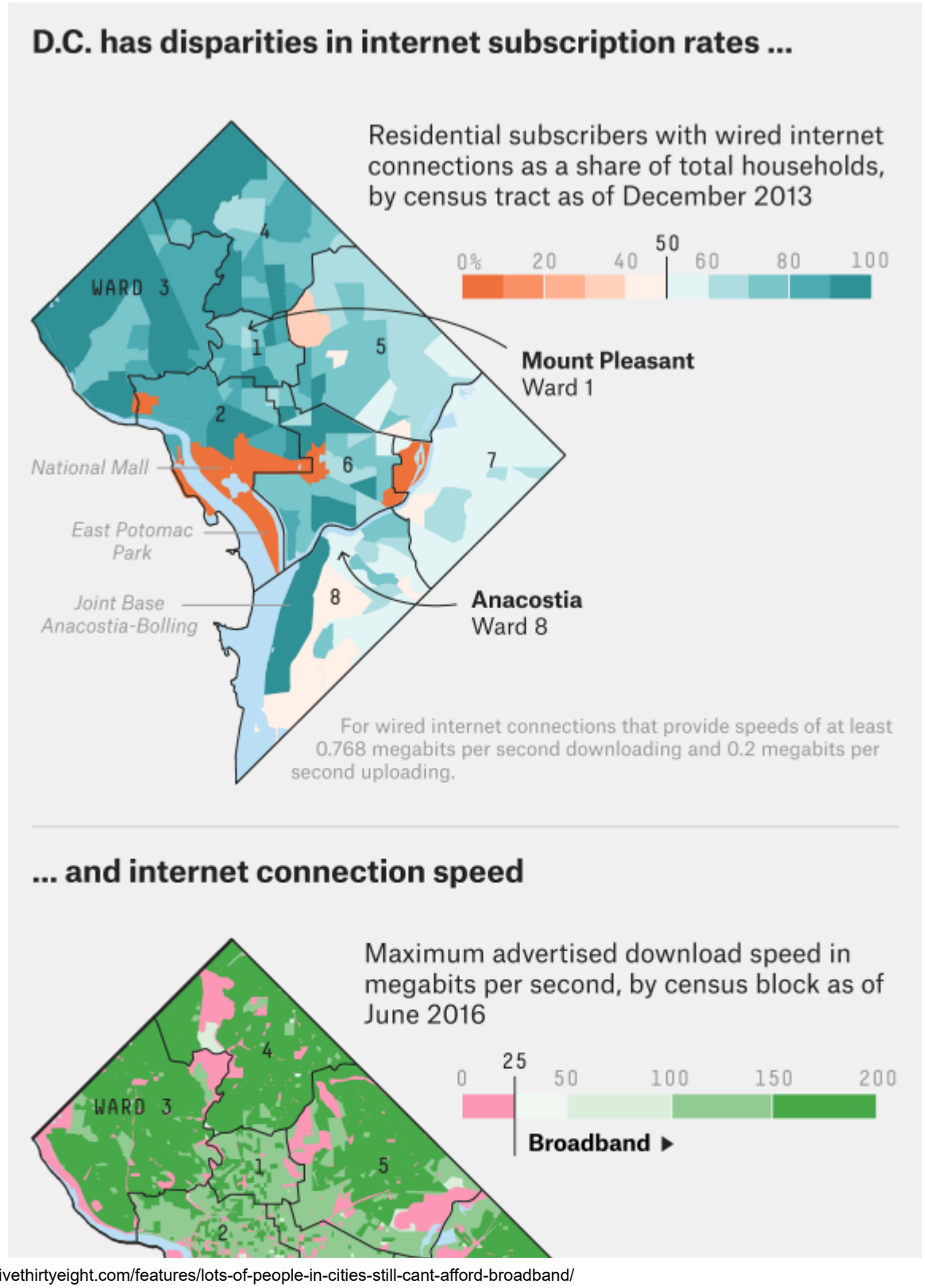
Archana Vemulapalli, the district’s chief technology officer who runs Connect.DC, told me that the program is an embodiment of what the city’s leaders hope will be the district’s future — a more skilled workforce and more connected residents throughout all parts of the city. “You have to define what the values of the city are,” she said as we leaned against the wall of a building in Washington trying to catch some shade on a hot early evening in mid-June. “For us, one of the core values we look for in anything we do is equity.”

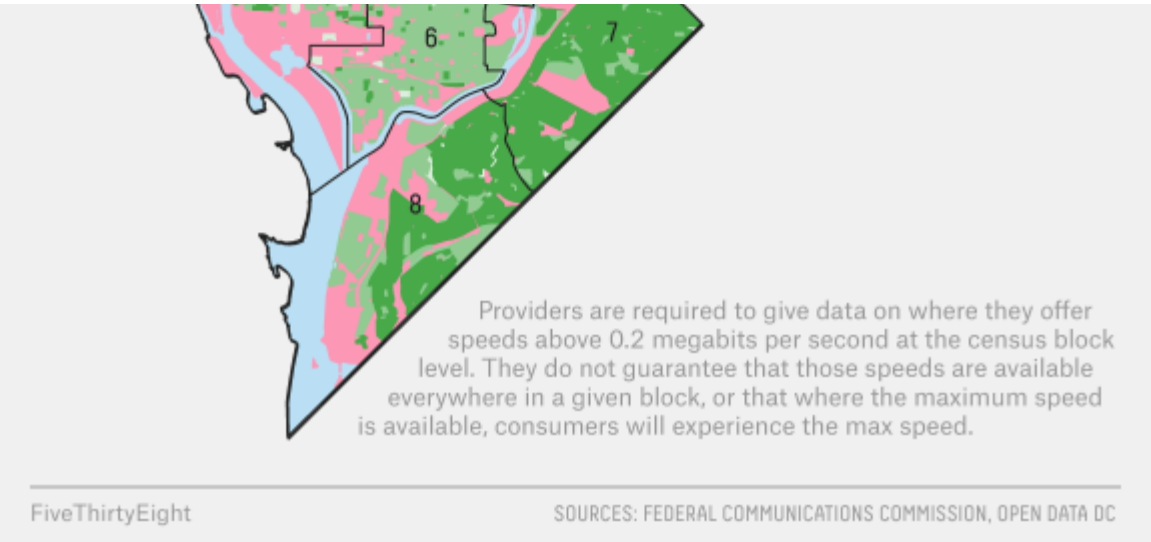
Parked across from us was an idling bus, and inside were nine students learning how to create an email address from Leo De Leon, an instructor with the nonprofit Byte Back, which works with the district government. The bus, the district’s mobile tech lab, is among the initiatives that Vemulapalli and a small team have undertaken to spread what might be called internet awareness.

To bridge the digital divide, she said, their work had to be three-pronged: “You need the device, you need training, you need the connectivity.” The mobile tech lab is used to teach people the basics: how to type, how to browse the internet and how to apply for a job online. Many residents have smartphones or browse online in libraries, but home connections offer a different experience and aren’t as common. Vemulapalli said that free Wi-Fi in public housing and rec centers was key to getting residents online more

reliably. Even with programs that helped supplement home broadband connections, many were unlikely to sign up for the service long term.

In part, that's because residents might not see the pertinence of internet to their lives. A pamphlet from Connect.DC provides a litany of reasons why residents might want to use the internet: applying for jobs, finding the best school for a child, downloading apps to track health, searching for housing and depositing checks.





Ward 8, across the Anacostia River, is where the most — 34 percent — computer literacy classes were taught in 2016; the area is mostly black, as are the majority of students that Connect.DC reaches with the classes. But De Leon's class was being taught that evening in Spanish, the native language of many residents of the Mount Pleasant neighborhood, where the bus stood idling. To recruit students, Connect.DC runs bus advertisements and goes door to door. De Leon, a former student in the same class he now teaches, said that he found out about the course after a serendipitous cold call to a prepaid phone he'd recently purchased. That was in 2014. Before that, De Leon said he had used a computer, but on a limited basis. "I didn't know how to cut, paste, stuff like that," he said.

Six men and three women, most who looked to be in their 40s or 50s, sat for two hours while De Leon helped them create Gmail addresses and passwords, and practiced their typing skills. Some, such as Abel Hernandez, 52, have jobs — he works for Arlington County's Department of Parks and Recreation in Virginia — and want to enhance their computer skills to help their careers. Hernandez, who was still wearing his reflective yellow shirt from work, said the class would help him learn how to research for the job, how to check his county email address, and how to look up his paychecks online. Gloria Marquez, 57, doesn't have a job and wanted to take the class, in part, because potential employers always ask her about computer skills and she tells them she doesn't have any. They ask for an email address to stay in touch, as did her former students. (Marquez taught elementary school in El Salvador.) "I was falling behind," she said.

For Arturo Griffiths, executive director of Trabajadores Unidos de Washington, D.C., a local community organization focusing on immigrant rights, the idea that Latinos are falling behind because of their lack of connectivity is particularly troubling at this political moment. Griffiths, who had told Hernandez, Marquez and other students about

the Connect.DC class, was waiting in the parking lot to chat with them after the class ended. Immigration issues were coming to a head under President Trump, Griffiths said, and "if we can't communicate, we're not involved in solving our own issues."

"Who's running the immigration advocacy? It's the gringos," he said. "I'm not knocking the gringos," Griffiths said, but the lack of Latino involvement worried him. He'd been to a meeting recently about Washington, D.C., as a so-called sanctuary city, and the ratio of attendees had troubled him. "Four hundred people and there were only two Latinos — everyone was a gringo. I said, 'What the hell is going on?'" In practical terms, activism in the 21st century came down to connections made online.

"We're not involved because we're not communicating," he said.

Read more: The Worst Internet In America

Footnotes

1. D.C. is a "county equivalent" entity, according to the census.
2. The researchers estimated county totals using data from a 1 percent sample of 240 million voting-age Americans provided by Catalist, an election data firm.

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Loudoun Times-Mirror

Rural Loudoun grapples with connectivity as world's data flows through high-tech east

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Monday, Apr. 3, 2017 by Chantalle Edmunds | 8 comments | Email this story

The stats are proudly mentioned far and wide by Loudoun County officials -- up to 70 percent of the world's Internet traffic passes through Loudoun County on a daily basis, with information and communications technology serving the largest industry cluster in Loudoun, employing more than 23,000 people.

Eastern Loudoun is more than qualified when it comes to having the right credentials for its unofficial title of "Silicon Dominion" or "Data Center Alley."

Yet less than 20 miles away, the situation in western Loudoun is far from technologically sound. An estimated 30,000 people in the west are under-served or un-served when it comes to Internet access.

"It's amazing that we live so close to the center of our county's government seat and yet we have such poor Internet service," Loudoun resident Erin Weaver said.

Weaver lives west of Lucketts and east of Lovettsville. She has Verizon for her cell phone but can't send or receive or receive texts in her house. She resorts to standing in her backyard if she wants to make calls.

"We just can't get high-speed Internet," she said. "We have Wildblue for our Internet. Due to the fact that our Internet comes from a satellite, when it rains heavily or snows heavily we can easily lose our service."

Elsewhere in the west, some residents have resorted to putting up poles in their backyard to try to get a WiFi signal from the nearest tower. Is this the 21st century

equivalent to rabbit ears?

On the county's Board of Supervisors, Tony Buffington (Blue Ridge) and Supervisor Geary Higgins (Catoctin) are advocating for better connectivity in western Loudoun.

“We are making improvements but still have significant work ahead,” the two supervisors told the Times-Mirror in a joint statement.

Both say they have worked to raise awareness of broadband and cellular inadequacies throughout western Loudoun by strengthening the county's state legislative policy statement and advocating for legislative solutions in the General Assembly.

The supervisors have worked with Congresswoman Barbara Comstock (R), a member of the the rural broadband caucus, in search of federal funding solutions that could help improve connectivity.

Loudoun County has conducted a wireless coverage gap analysis, and barriers to service – like fiber cost and complexity – have been identified for rural Loudoun. Return on investment is a major obstacle for service providers.

Practically, the greatest success to date seems to have risen from Buffington and Higgins trying to resolve problems on a case by case basis.

“Residents can call our offices with their locations and we put them in touch with our county staff and service providers to see about getting them access. Each situation is unique so there is no guarantee for connection but we have had success on this front for a number of our residents,” Buffington and Higgins said.

While the western supervisors have seen some success, large gaps still remain. “The biggest challenge to expanding broadband coverage in western Loudoun is getting service providers to provide coverage in less dense areas,” Buffington and Higgins said.

Not all providers are shirking away from western Loudoun, however. Its problems are providing opportunities for a growing number of smaller wireless providers like All Points Broadband. The Leesburg-based company's mission statement reads: “We deliver a reliable last mile solution. Our mission is to bring broadband access to communities where current options are too slow, too expensive or don’t exist.”

But for residents like Courtney Shipe, who lives just south of Lovettsville off Rodeffer Road, the path to connectivity, which large swathes of the population take

for granted, is far from smooth. To date the only provider she has found willing to provide service is Verizon.

“We have Verizon DSL 'high speed' internet,” Shipe said. “Almost daily our phone line and internet service will randomly cut off for hours at a time. We've have multiple repair technicians come out only to tell us the problem isn't on our end. It is quite frustrating and affects our working at home."

Shipe continued, “I have heard from the neighbors that Comcast comes to either end of my road – where it is paved – but it's not worth the money for them to connect through to the rest of us.”

The Washington Post

All Opinions Are Local

The broadband split in Northern Virginia

By Peter Galuszka April 20

Northern Virginia takes pride in being a global center for high-speed broadband communications.

The Internet got its start there as an advanced Pentagon project. Early companies such as AOL were Web pioneers back in the 1990s. Today, the Virginia suburbs are dotted with hundreds of acres of air-conditioned server farms.

By some accounts, about 70 percent of the world's Internet traffic passes through Loudoun County daily.

But if you happen to live in more rural western Loudoun, good luck getting decent Internet service. Courtney Shipe, according to the Times-Mirror, lives near Lovettsville and is hard-pressed to find an Internet provider.

She has managed to get connected through Verizon through a DSL link but "almost daily, our phone line and internet service will randomly cut off for hours at a time," she told the newspaper. It's cold comfort when technicians tell her the problem isn't on her end.

It's seems bizarre that in 2017 parts of Northern Virginia are still stuck with pre-1990s modes of communications. But it's something much of rural Virginia has been dealing with for years.

The problem is simple economics. Big providers such as Verizon and Comcast favor densely populated suburban areas where their installation costs are low. They can boost their margins by bundling Internet with 300-plus channel cable television and phone service.

They are not exactly marching to remote areas to provide access. The biggest hang up is the so-called "last mile" to connect a distant household or business to a spoke-and-hub Internet network.

In southwest Virginia, localities such as Bristol have abandoned hopes of the Big Internet helping them out and have been operating municipally owned Internet providers for years.

Some have gotten financial help from the Tobacco Region Revitalization Commission, a kind of community development slush fund, with money from court settlements from large cigarette makers for health concerns.

But amazingly, the Internet service shortages still linger. In January, for instance, Fauquier County Public Schools partnered with Kajeet, a broadband provider, to bring Wi-Hi hotspots to students' schools and homes. That way, they can do their homework as if they live in the 21st century.

But bringing broadband to the hinterlands faces other problems. Some for-profit companies unleash their lobbyists on the General Assembly to whine about publicly owned broadband providers.

And, although expanding Wi-Fi is a no-brainer when it comes to improving economic prospects for downtrodden communities, the Trump administration is going in the opposite direction.

While Trump claims he is the champion of coal miners in places such as southwest Virginia, his budget proposals would do away with the Appalachian Regional Commission, a 1960s-era public group that has been working to bring broadband to the coalfields.

If former coal miners can get linked up with the Internet, their transition to replacement jobs would be easier. Doing away with the commission doesn't make sense.

West Virginia, with plenty of potential broadband users living in remote areas, may be a good example to follow. A bill moving through the state legislature would establish a 13-person broadband council to study and advise on broadband enhancement.

The bill would also keep Internet providers honest by requiring them to advertise their minimum possible speeds rather than tout maximums that do not always apply.

Trump says he wants to spend $1 trillion on infrastructure but hasn't come up with any solid details. Expanding broadband would be a win-win.

Peter Galuszka is a regular contributor to All Opinions Are Local.

AT&T broadband deployment skipped low-income Dayton neighborhoods

by Bill Callahan | Mar 22, 2017 | Digital Inclusion News |

Advocates for Basic Legal Equality, an NDIA affiliate that provides legal services for low-income residents in the Dayton and Toledo areas, released the following statement this morning:

Advocates for Basic Legal Equality, Inc.

FOR IMMEDIATE RELEASE

DATE: March 22, 2017

AT&T Fails To Invest in Low-Income Montgomery County Neighborhoods

Earlier this month the National Digital Inclusion Alliance and Connect Your Community, a Cleveland based organization, published a report indicating that AT&T had "systematically discriminated against lower income Cleveland neighborhoods in its deployment of home internet and video technologies over the last decade."

The organizations reviewed broadband availability data submitted by AT&T to the Federal Communications Commission for June 2016 to reach its conclusions, suggesting that the company withheld broadband improvements from neighborhoods with high poverty rates while upgrading its network in other parts of Cuyahoga County. (**click here for the report**)

"On behalf of the Edgemont Neighborhood Coalition, we requested the same analysis for the AT&T service territory in Montgomery County," says Ellis Jacobs, senior attorney with Advocates for Basic Legal Equality, Inc. (ABLE). "That territory includes the eastern half of the County and all of the City of Dayton."

The analysis shows that AT&T has failed to upgrade its network in low income neighborhoods, including most of the City of Dayton, while deploying a high-speed fiber based network in wealthier suburban areas. "The company has upgraded areas around the City to its mainstream technology (Fiber to the Node, VDSL) but has failed to do that in Dayton, leaving those neighborhoods with an older, much slower technology (ADSL-2)," adds Jacobs.

A **map of the Montgomery County AT&T service area** showing where AT&T has invested and where it has not invested can be found **here**. (Note: The gray area on the West side of the map is another company's territory and was not reviewed for this analysis. Only the green areas have high speed service.)

According to Jacobs, "this has all the appearances of 'digital redlining,' discrimination against residents of lower income urban neighborhoods in the type of infrastructure AT&T installs and the type of broadband service it offers. High-speed internet is a critical modern day utility. Without it, residents and businesses are at a distinct disadvantage."

The principle of Universal Service has been at the heart of telecommunication policy in the United States since 1934. That principle recognizes that telecommunication services are essential, that we all do better when everyone is connected. "There should be no discrimination in the provision of services," says Jacobs.

# # #

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The following quote can be attributed to Angela Siefer, Director of the National Digital Inclusion Alliance –
"AT&T's broadband infrastructure buildout in Dayton looks very similar to Cleveland, that is – low-income neighborhoods are less likely to have more recent broadband investment, And just as with Cleveland, we can clearly define this as digital redlining. Lack of investment equals lack of competition which means slows speeds and higher service costs in those neighborhoods."

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Digital Equity is a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy and economy. Digital Equity is necessary for civic and cultural participation, employment, lifelong learning, and access to essential services.

Digital Inclusion refers to the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies (ICTs). This includes 5 elements: 1) affordable, robust broadband internet service; 2) internet-enabled devices that meet the needs of the user; 3) access to digital literacy training; 4) quality technical support; and 5) applications and online content designed to enable and encourage self-sufficiency, participation and collaboration. Digital Inclusion must evolve as technology advances. Digital Inclusion requires intentional strategies and investments to reduce and eliminate historical, institutional and structural barriers to access and use technology.

https://www.clevescene.com/cleveland/atandt-has-historically-excluded-cleveland-poorest-neighborhoods-from-improved-internet-service-and-thanks-to-ohio-law-those-areas-are-now-fro/Content?oid=6699144

State Laws Allowed AT&T to Exclude Cleveland's Poorest Neighborhoods From High-Speed Internet Service

By Eric Sandy

Eric Sandy Photos

Howard Barksdale, 66, works through a class at Ashbury Senior Computer Community Center.

It's Friday morning, and Howard Barksdale is running late. He drives in from Bedford to Cleveland's Glenville neighborhood twice weekly to attend classes at Ashbury Senior Computer Community Center, and today he got caught up in the slow service of the BMV. Slow service is everywhere these days.

- Courtesy of National Digital Inclusion Alliance

Internet download speeds are glacial once you get into neighborhoods like Glenville, where AT&T willfully avoided rolling out its U-Verse service a few years back. The company has been accused of "digital redlining," specifically of leaving

the poorest neighborhoods out of its infrastructure improvements in cities like Cleveland, Toledo, Dayton, Louisville, Detroit and Milwaukee.

High-speed internet — "VDSL," carrying download speeds of at least 18 megabits per second — just doesn't exist in Glenville. Ashbury offers a high-speed internet oasis via its Sprint Wi-Fi hotspot, and people come here to play catch-up and get the hang of things like email and search.

"I don't like not knowing," Barksdale says. "I refuse to be blindsided or afraid of anything like this. The only way to attack it is to attack it head-on, and I'm not going to let go until I tear it up." At 66, he has dipped his toes into the digital world only to wind up on the wrong end of a computer virus. You've got to learn how to navigate these waters. Fast, or at least serviceable, internet speeds make the education process not only easier but feasible.

Ashbury sits quietly among a row of three-story homes in Glenville, a mostly impoverished neighborhood that squats in the crook of glitzy University Circle and even-more-impoverished East Cleveland. It sits quietly on Ashbury Avenue, in fact.

Across two rooms, 30 computer stations beckon eager students who work through tiers of classes before graduating in the summer. On some days, the center offers open lab hours. People come from all over to log in and look up their MyChart progress at MetroHealth or help their children through an online homework assignment. At home, for most of the people who live in Glenville or Hough or East Cleveland, functioning internet speeds simply don't exist.

Wanda Davis runs Ashbury with her family, and she knows these problems well; her neighborhood has a long history of being targeted by real estate developers and

City Hall for redlining purposes. When she and her family were looking for a new business opportunity in 2001, they surveyed neighbors and landed on a clear-cut demand: People were going to need to keep up with the fast pace of 21st century life.

"At that time, the awareness of the Big Wave and the revolution of the computer industry was just under way," Davis says. That was back when internet speeds were mostly uniform across the city, before state legislators turned their backs on the market. "We saw the need back then, and here we are now, first believing way back then that that need would shrink, but the need has actually increased. Technology has moved so rapidly. Now, there's a real true saying: 'living online.'"

Anymore, it's nearly impossible to live in the real world — finding and keeping a job, paying bills, handling the ins and outs of health care and aging — without also living online. At Ashbury, Davis and her fellow instructors make sure that the seniors of Northeast Ohio not only keep up with the constantly shifting sands of the internet but get a grasp on the very basics: In a video produced for the center last year, one woman says, "I've heard people talk about being able to stream from the computer with the Wi-Fi."

Ashbury works closely with Connect Your Community, a local organization that last year began a comprehensive investigation into the real story behind Cleveland's incongruous internet access — the digital divide. The group ended up uncovering a web of discriminatory practices authorized in full by the state of Ohio.

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The problem became apparent last summer.

In 2016, AT&T, one of two major cable internet providers in the Cleveland area, began a new "Access" program imposed by the FCC that offered $5- or $10-per-month internet service for customers enrolled in the state's Supplemental Nutrition Assistance Program (SNAP). The $10 threshold was for customers who had access to 6 mbps (megabits per second) download speeds, and the $5 threshold was for 3 mbps. Connect Your Community wanted to raise awareness of this issue, because access to low-cost internet services is part of its mission.

Bill Callahan, director of Connect Your Community, acknowledges that not everyone speaks fluent DSL. For illustration purposes, 6 mbps is hell on YouTube or Netflix. Three mbps is even worse, turning your average PDF download into a chore. At 25 mbps and up, the new AT&T standard in Northeast Ohio's more affluent suburbs, it feels like gliding on ice.

In 2017, the FCC assumes 25 mbps as a legitimate level of broadband service that ought to be everywhere.

"In general, we try to figure out a way to make the fact that 50 percent of Cleveland low-income households don't have internet access — and a similar number in Detroit — an actionable issue," Callahan says. He and his partner organizations initially wanted to help get 5,000 people signed up for the AT&T program.

The organizations began looking at FCC Census block data to determine which households would be eligible for which tier of the new AT&T program and soon found out that most customers simply weren't eligible at all. Throughout the city of Cleveland, households and businesses languish on internet speeds of 1.5 mbps or .768 kbps — and they were often paying more than the $5 per month that AT&T was offering customers at higher speeds. Callahan was surprised. "What we realized when we did the map was, hey, that's a fifth of the city," he tells Scene. "Obviously what the FCC thought was that everybody has 3 mbps service."

Scattered news coverage at the time, including a story by CNN, forced AT&T's hand; the company extended its $5-per-month offer to users who were operating at sluggish speeds. The central problem, though — Cleveland neighborhoods' lack of high-speed internet access — was not addressed. The big picture demonstrates that this was always the plan. And those homes aren't getting upgrades anytime soon.

Through the AT&T Access experience last summer, a window to the company's history of broadband deployment was opened. If wide swaths of low-income families were stuck with low-speed internet in spite of clear-cut demand — if more than 20 percent of a major American city was being left behind on the digital superhighway — then something must have gone wrong.

Surely the market would have course-corrected by now, right?

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Most at-home internet users in Cuyahoga County know that the two major service providers around here are AT&T, which offers its U-Verse package, and Spectrum, which was born recently out of Charter Communications' acquisition of Time Warner Cable. In many neighborhoods in Cleveland, Spectrum is the sole option. There's a simple reason for that.

Let's roll the tape.

Before Spectrum, there was Time Warner Cable. Before Time Warner, there was Adelphia, which purchased CableVision for $1.5 billion in 2000. At that time, Adelphia went to city council for approval of its franchise and agreed to do a citywide upgrade to CableVision's digital services on every block. Back then, ISPs had to negotiate terms with municipalities; it's what's called "home rule." The public, in theory, has the upper hand.

Within two years there was a cable system passing through every address in the city. To date, under Spectrum, you can get internet speeds of 50 mbps anywhere in Cleveland. You may not be able to afford anything close to that, but it's there.

The marketplace theory goes like this: Cable competition would naturally lower prices and, on a long enough timeline, produce the highest quality product for the broadest customer base.

As internet technology evolved and companies like AT&T sought to expand in cities like Cleveland, home rule was seen more and more as an obstacle to innovation. Let the companies do their work unburdened, the thinking in the Statehouse went, and we'll see real competition. The end users will reap the bounty of the marketplace.

Anyone reading the headlines in states like Ohio and Michigan 10 years ago would have gotten that impression. Senate Bill 117 was working its way through the state legislature, proposing to eliminate the municipal franchising of cable television providers, to eliminate home rule with respect to cable and internet providers. AT&T lobbied vigorously in support of the bill.

But the bill, which postured to open up the marketplace, inherently allowed providers to pick and choose which parts of a municipality they wanted to serve.

Mayor Frank Jackson, a career proponent of home rule, and city council naturally opposed the bill. Never mind the fact that city council would go on to appoint then-State Rep. Eugene Miller, who voted yea on SB 117, to a council seat within a few years.

Miller is not alone among pro-SB 117 politicians with deep ties to the Cleveland area: State legislators who approved the elimination of municipal cable franchising include Cuyahoga County Executive Armond Budish, Cuyahoga County Councilman Dale Miller, Cuyahoga County Sustainability Director Mike Foley, State Sen. Mike Skindell (a one-time candidate for Lakewood mayor), former State Sen. Shirley Smith (a one-time candidate for the Cuyahoga County executive) and so on.

In fact, every Democrat and nearly every Republican in the General Assembly in 2007 approved the bill. Only State Rep. Thomas Brinkman (R-Mt. Lookout) and former State Rep. Jeff Wagner (R-Sycamore) opposed.

Budish, in fact, co-sponsored the final legislation, opening the gates for internet service providers to call the shots.

"In other words," Callahan tells Scene, "SB 117 was an open invitation to Ohio telcos and cable providers building the next generation of IP — internet as well as TV — services to cherry-pick some communities and redline others."

As part of the SB 117 passage, the Ohio Revised Code now reads: "Ohio's economy will be enhanced by investment in new communications and video programming infrastructure, including fiber optic and internet protocol technologies. ... Increased competition in the provision of video service will provide new and more video programming choices for consumers in this state, and new providers have stated their desire to supply that service."

A decade later, that has not panned out.

In 2010, the situation concretized when the Statehouse declared that the internet was not a public utility. The Public Utility Commission of Ohio was stripped of its oversight, as well. Local governments were even further removed from the supposed market.

An AT&T spokesperson confirmed to Scene that the company has invested "nearly $1.5 billion in our Ohio wireless and wired networks during 2013-2015, with more than $325 million of that in Cleveland." But from 2007 to 2009, the company had invested a greater amount: $1.6 billion statewide.

A 2013 presentation to the Select Committee on Telecommunications Regulatory Reform demonstrated how the negative effects of the PUCO bill took hold almost immediately: Private investment decreased, telecom employment decreased in Ohio more than any other Great Lakes state, service rates increased and service complaints received by PUCO increased (especially for AT&T services). Despite all of that, home broadband adoption increased 16 percent from 2008 to 2012. The demand is always there, not unlike the market for utilities like electricity, but the regulation of resources was gone.

"The whole point of 2007 was to eliminate the monopoly," Callahan says. "Classic utility thing. You either have regulation or you have competition, right? It turns out that regulation is the way you get competition."

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With the long history of Ohio's "cable competition" legislation as its backbone, the National Digital Inclusion Alliance released a report this past winter that shows how AT&T willfully expanded its high-speed internet services in Cleveland and left the city's poorest neighborhoods to languish with sluggish technologies. The organization uses the term "digital redlining," and a series of maps reinforces the point.

[image-3]

Using records and data provided to the FCC, the NDIA designed several maps that show where AT&T's highest and lowest internet speeds are offered. As AT&T developed its technology and rolled out improved services, neighborhoods like Hough, Glenville, Central and Fairfax — where the poverty rate runs higher than elsewhere in the city — were excluded.

Between 2008 and 2013, according to NDIA, AT&T outfitted Cleveland with optical fiber extensions and VRAD cabinets — the infrastructure that would support its new U-Verse technology.

Here's how it works: The U-Verse system has fiber cables traveling from all but four wire centers in Cleveland to central cabinets located in neighborhoods around the city. The wire center at West 65th and Madison, for instance, has never been outfitted with this "fiber to the node" technology; if you live in Detroit Shoreway, which was a different-looking neighborhood during the U-Verse roll-out, AT&T's high-speed internet isn't an option.

The four wire centers that AT&T excluded from its U-Verse infrastructure aren't located anywhere near wealthier suburban customer bases: West 65th Street and Madison Avenue, 5400 Prospect Ave., 2130 East 107th St. and 12223 St. Clair Ave.

Indeed, not all of Cleveland or Cuyahoga County is served equally by this fiber-based U-Verse infrastructure, flying in the face of SB 117 hopes and wishes — and despite a state provision that prohibits cable companies from discriminating against a particular customer base: "[N]o video service provider shall deny access to video service to any group of potential residential subscribers in its video service area because of the race or income of the residents in the local area in which the group resides."

Homes with access to internet download speeds of 18 mbps or more are found in the outlying areas of the county, and most of Cleveland is left with significantly slower access. This discrepancy hampers any number of quality-of-life issues relating to employment opportunities, homework, job training and state bureaucratic activities. ("You're either employed or you're trying to be," Callahan said.) The "digital divide" is a real thing.

"There's going to be all these people who are applying for unemployment in your districts, and you're going to be telling them to drive to a library," Callahan says. "Good luck, right?"

Since 2013, though, AT&T has moved on to different types of internet access technology, and by all accounts is no longer deploying that sort of U-Verse "fiber to the node" infrastructure, meaning that there are no improvements in sight for

Cleveland's poorest neighborhoods. The areas that were not built out with fiber infrastructure will be unable to join a future theoretical 5G data system or, say, the mostly abandoned Google Fiber project.

"The national context of this is that AT&T basically gave up on this deployment and changed its business model," Callahan says. "There's nothing random about this. The decision to [build out fiber infrastructure] in some wire centers and not others is a deliberate planning decision. This has nothing to do with customer demand; they had no idea what the customer demand was going to be when they did this. It's a decision built on the characteristics of the neighborhoods. In general, I would say that means poverty."

A spokesperson from AT&T responded to Scene in March, shortly after the NDIA report was released: "Access to the internet is essential, which is why we've continuously invested in expanding service and enhancing speeds. The report does not accurately reflect the investment we've made in bringing faster internet to urban and rural areas across the U.S. While we are investing in broadband, we're also investing in technologies that will mitigate some of the infrastructure limitations."

AT&T is not alone in the benefits it reaps from a lack of municipal franchise competition. Time Warner, which has since been acquired by Charter Communications, canceled long-standing agreements forged between predecessor Adelphia and the city of Cleveland to maintain its institutional network. When Charter bought Time Warner and created Spectrum, the city of Cleveland could do nothing but watch.

In April 2017, the FCC terminated the acquisition clause that mandated that Charter build out its internet service (inherited from Time Warner here in Cleveland) to 1 million customers who already had access to a competing service (like AT&T).

There is no competition between Spectrum and AT&T, since AT&T has simply decided not to outfit particular neighborhoods with its internet services.

That's the point, Callahan argues, of SB 117. Get the city out of the way, and private companies can do as they please. It's "a feature, not a bug" of Ohio's

telecommunications laws, he says. FCC trends show that, soon enough, oversight will become completely consolidated at the federal level.

Logan Martinez, writing for The Columbus Institute for Contemporary Journalism in May 2007, called the shot: "SB 117 allows cable companies to redline, targeting wealthy and middle class neighborhoods for service, avoiding low income and working class neighborhoods."

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If one were to take a brief detour south on I-75, one would arrive in Chattanooga, Tennessee (population 173,000), where 58 percent of the population is white and 35 percent of the population is black.

In 2010, the southern Tennessee city became the first area in the U.S. to be wired by a municipality for 1 gbps fiber-optic internet service. In 2015, the city began offering 10 gbps service. This is the absolute cream of ISP technology. (For comparison, Spectrum maxes out at 300 mbps, less than 25 percent of the rate that Chattanooga residents experience. Returning to Glenville, internet users there trudge along at less than 1 percent of Chattanooga's rate.)

It's "the fastest, cheapest and most pervasive internet infrastructure in the country," according to Digital C's Lev Gonick here in Cleveland.

In upgrading Chattanooga's electrical grid in 2009, municipal power company EPB laid fiber optic cable to each consumer's home simultaneously. This was the groundwork for Chattanooga's revelatory move. The logistics are almost too simple in hindsight; EPB already had access to the right-of-way needed to run fiber. At the time, most Chattanooga consumers were using Comcast's internet access, which came at a drastically slower speed and a much higher price.

After working to set up the fiber infrastructure, Chattanooga sought out companies like Google and Apple and various capital venture firms. "We tried a lot of things, and it didn't work," Chattanooga mayor Andy Berke said at a recent City Club of Cleveland event. (As an aside, almost, to Gonick in the audience, Berke audibly said "Ugh" when considering speeds of 15 mbps in the Cleveland area, one one-hundredth of his city's speed.)

Chattanooga is a fine example, but there are now almost 500 communities in the U.S. offering publicly owned internet services. "Even in places where private companies provide high-speed service, a public internet option may prove increasingly vital to low-income residents," The Nation's Peter Moskowitz wrote last year.

There's nothing stopping Cleveland from heading down that path. Callahan even wrote in 2007 on his blog: "If there was ever a good reason for Cleveland to hesitate to build our own community-owned, multi-user network infrastructure, that reason is now history." Cleveland Public Power, the successor of Muny Light — that public utility that former mayor Dennis Kucinich so vigorously fought for in the 1970s — is here already. (Callahan told Scene last fall: "The other obvious option is it's another argument for the city to build its own. That's really the only thing cities can do anymore. Right now, there's no prohibition on this city building an internet system.")

Because of the structure of Ohio's laws (and the laws passed elsewhere), digital giants like AT&T and Comcast have little incentive to upgrade their infrastructure in low-income neighborhoods — never mind the demand and feasible affordability. The fact remains, and telecom giants don't like when people point out the demand curve.

Comcast has sued the city of Chattanooga twice in an effort to stop the municipally owned infrastructure development. The public won. It's possible.

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The NDIA headlines — which may have made the rounds on suburban Facebook pages this winter, inspiring fits of outrage and sad and red-face emojis — weren't your classic front-page revelations in neighborhoods like Glenville.

"People have been saying, 'Oh, did you read the redlining report?' 'Oh, well, we knew that,'" Wanda Davis says, describing the conversations that have taken place since NDIA revealed its findings. It's sort of taken for granted in Glenville. "The area's been redlined before between financial institutions and insurance institutions and reinvestment portfolios ... . All of the older seniors kinda know

from the years of redlining by other companies; they say, 'Well, Ms. Davis, we could have told you that.'"

"When we started doing it, the internet was not a thing; email was barely a thing in general culture. This was basically about how to use a word processor or you couldn't function economically," Callahan says. "Now it's the fact that you can't apply for a job."

Neighborhoods like Glenville are stuck in digital time now. Because there's no fiber infrastructure in place, there's no way for future technologies to access these places without rolling out a near-total overhaul of the system — something that telecom companies can avoid, because there's no government compelling them to do so.

The poor stay poor; the rich binge Stranger Things.

https://www.clevescene.com/cleveland/atandt-has-historically-excluded-cleveland-poorest-neighborhoods-from-improved-internet-service-and-thanks-to-ohio-law-those-areas-are-now-fro/Content?oid=6699144

AT&T'S DIGITAL REDLINING

A mapping analysis of Federal Communications Commission broadband availability data, conducted by Connect Your Community and the National Digital Inclusion Alliance, strongly suggests that **AT&T has systematically discriminated against lower-income Cleveland neighborhoods in its deployment of home Internet and video technologies over the past decade.**

Our analysis, based on newly released FCC Form 477 Census block data[1] for June 2016, provides clear evidence that AT&T has withheld fiber-enhanced broadband improvements from most Cleveland neighborhoods with high poverty rates – including Hough, Glenville, Central, Fairfax, South Collinwood, St. Clair-Superior, Detroit-Shoreway, Stockyards and others.

This analysis is part of a six-month effort that began when CYC and NDIA learned that residents of many Cleveland neighborhoods were being declared ineligible for AT&T's "Access" discount rate program, solely because they couldn't get AT&T connections at the 3 mbps download speed that was then the program's minimum requirement.[2]

After analyzing previous FCC Form 477 data releases, along with City construction permits and other information, we've come to believe that the ultra-slow AT&T Internet speeds available to those Access applicants reflect a larger problem: AT&T's failure to invest to upgrade most of its Cleveland network to the company's mainstream technology.

Specifically, AT&T has chosen not to extend its "Fiber To the Node" VDSL infrastructure – which is now the standard for most Cuyahoga County suburbs and other urban AT&T markets throughout the U.S. – to the majority of Cleveland Census blocks, including the overwhelming majority of blocks with individual poverty rates above 35%.

These neighborhoods have been relegated to an older, slower transmission technology called ADSL2, resulting in significantly slower Internet access speeds than AT&T provides to middle-income city neighborhoods as well as most suburbs.

As a result, their residents are left with
-uneven, often severely limited Internet access – in many cases 3 mbps downstream or less; and
-no access to the competitive fiber-enabled video service that AT&T promised communities in exchange for "cable franchise reform", i.e. the elimination of municipal cable franchising, in Ohio in 2007.

Because the patterns revealed by this analysis result from a decade of deliberate infrastructure investment decisions, NDIA and CYC believe they constitute strong evidence of a policy and practice of **"digital redlining"** by AT&T — i.e. income-based discrimination against residents of lower-income urban neighborhoods in the types of broadband service AT&T offers, and in the company's investment in improved service.

BACKGROUND

The data

The FCC's Fixed Broadband Deployment Data is based on Form 477 reports gathered every six months from all regulated Internet Service Providers. It's released to the public on the FCC website six months to a year later. Among other things, the Form 477 deployment data includes individual companies' own accounts of the broadband technology they're using to deliver residential service in each Census block, and the "Maximum Advertised Download Speed" (as well as Upload Speed) for each such technology in that block.

In the case of AT&T, Form 477 block data shows where the company is offering 18, 24, 45 or 75 mbps download speeds via fiber-enhanced VDSL service, or even gigabit speeds via Fiber To The Home (FTTH), and where their Internet service is limited to slower speeds (often much slower) because it's still delivered over copper wires from a "central office" that may be miles away, using a version of old-style ADSL technology called ADSL2.

On March 3, the FCC posted its latest round of Census block broadband deployment data, drawn from providers' Form 477 reports for June 2016. This analysis is based on that most recent release.

AT&T home broadband technologies

In general, AT&T offers home Internet, "cable" TV programming and IP phone services using one of three delivery technologies: **Fiber To The Home, Fiber To The Node / VDSL,** and **ADSL2.**

-The newest and fastest of the three, not yet available in most of the Cleveland market but coming on rapidly in other metros, is **Fiber To The Home (FTTH)** – now branded as "AT&T Fiber". As the name suggests, this is very fast service (typically up to 1,000 mbps, i.e. 1 gbps) delivered by optical fiber all the way to the customer premises.

1 - https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477
2 - https://digitalinclusion.org/blog/2016/09/05/access-from-att-problem/

-The current mainstream AT&T home network technology, built out in Ohio and other markets between 2007 and 2014, is **Fiber To The Node (FTTN)**. Data travels via fiber to a "Video Ready Access Device" (VRAD) in a wiring cabinet in a neighborhood, often on a tree lawn or similar location, and then from the VRAD to the customer premises via a copper loop. AT&T's FTTN system uses an advanced digital subscriber line technology called "Very-high-bit-rate digital subscriber line" or VDSL. VDSL technology can transmit data downstream and upstream simultaneously, at speeds of 100 mbps or more. AT&T's Form 477 data lists "maximum advertised download speeds" for VDSL service of 18, 24. 45 and 75 mbps.

-Where AT&T hasn't upgraded its service to either FTTH or FTTN, new accounts are served using an older technology called **"asymmetric digital subscriber line 2" (ADSL2 or ADSL2+)**. Data travels to an AT&T "central office" via fiber optics, is run through a "Digital Subscriber Line Access Multiplexer" (DSLAM) there, and then is sent over a copper loop to the customer premises – often a distance of two to three miles or more. The ADSL2 technology used by AT&T has a maximum download speed of 18 to 24 mbps near the DSLAM, but drops rapidly to 6 mbps, 3 mbps or less at distances above a mile.

The history

Back in 2007, AT&T succeeded in lobbying the Ohio General Assembly to eliminate municipal franchising of cable television providers by dangling the promise of a new era of "cable competition" in communities throughout its service territory. The key to this promise was deployment of AT&T's Fiber To The Node technology, which was then branded as "Lightspeed" but became "U-Verse" shortly afterward.

By either brand name, what AT&T offered – and the General Assembly bought – was the now-familiar network of optical fiber extensions, VRAD cabinets on tree lawns, and upgraded local copper loops that enable AT&T to deliver TV programming as well as Internet access at speeds that compete with traditional cable providers like Time Warner and Cox.

AT&T's "cable franchise reform" legislation explicitly permitted providers under the new state-run video service authorization system to serve less than 100% of their designated service territories – a provision that led critics like the City of Cleveland to warn of the exclusion of poorer neighborhoods. But the new law also prohibited economic or racial discrimination: "[N]o video service provider shall deny access to video service to any group of potential residential subscribers in its video service area because of the race or income of the residents in the local area in which the group resides."

In any event, AT&T dismissed the idea that providers would redline or cherrypick communities, and legislators apparently believed them; the legislation passed both houses with virtually unanimous support, including "Yes" votes from every Cleveland representative.

Freed from the inconvenience of seeking municipal franchises, AT&T's began aggressive deployment of U-Verse FTTN infrastructure in 2008. This deployment was largely completed (at least in Cleveland) by 2013.

According to City of Cleveland records obtained by CYC through public records requests, AT&T sought and received Right of Way Occupancy Permits to install VRAD cabinets in 80 neighborhood locations between 2008 and 2013, and an additional four locations in 2016. (Note: Gaps in the permit numbers suggest that there may have been another dozen permits issued, but not supplied to us.)

There is no indication that AT&T has expanded its FTTN infrastructure to any new areas of the city of Cleveland since 2013. (The four VRAD locations permitted in 2016 are all near previous installations.) Nationally, the company says it has moved on to FTTH and is only installing new FTTN infrastructure "on a case-by-case basis".[3]

Following its 2015 acquisition of DirectTV, AT&T began marketing satellite television to prospective customers who are not in areas served by FTTN and therefore unable to receive wireline video programming.

CYC/NDIA ANALYSIS

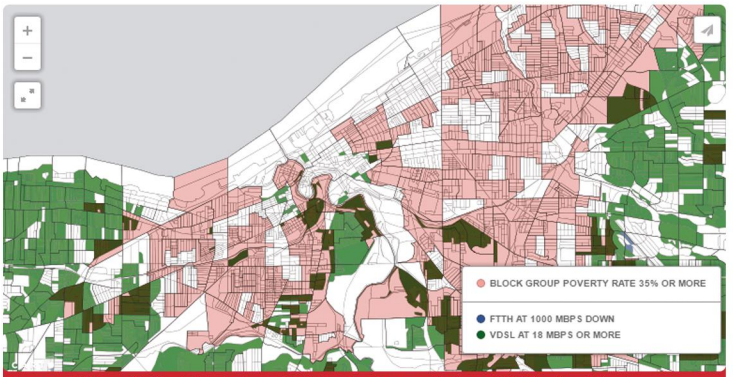
CYC and NDIA undertook this analysis to learn what the new Form 477 Census block data tell us about three questions:

1. Where has AT&T invested in providing its mainstream Internet speeds and video services to residents, and where has it chosen not to do so?
2. How does AT&T's deployment of FTTH/VDSL service compare to the distribution of high poverty areas, especially in Cleveland?
3. Where are AT&T's "maximum advertised download speeds" still provided by ADSL2 technology – i.e. old-style copper wire from a "central office" – and what are those speeds, especially in the Census blocks farther away from the central offices serving them?

To address the first two questions, we mapped all the Census blocks in Cuyahoga County where AT&T's Form 477 data indicates it was able to provide Internet access via VDSL technology to at least one household, at a maximum download speed of 18 mbps or more, in June 2016. (We included a couple of blocks where the data show Fiber To The Home service with 1 gbps download speeds.) Then we overlaid a map of all the Census block groups in the county where 35% of residents had incomes below the poverty line in 2015. The results are striking.

3 - http://www.lightreading.com/gigabit/fttx/atandt-preps-for-big-fiber-build-/a/d-id/723695

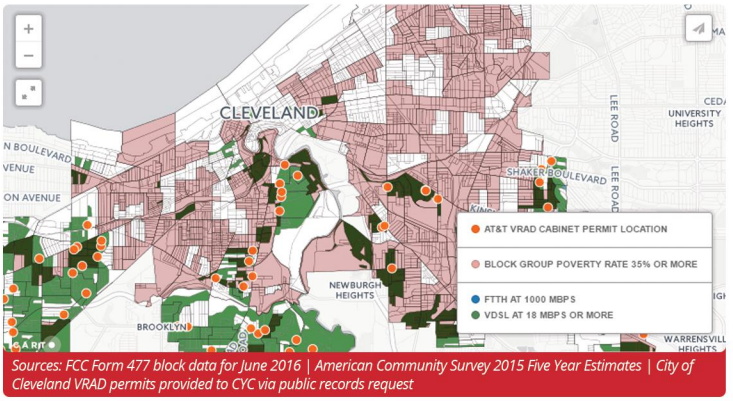
MAP 1: AT&T's Fiber To The Node network covers most of Cuyahoga County but not most Census blocks in Cleveland, especially those in high-poverty neighborhoods.



Sources: FCC Form 477 block data for June 2016 | American Community Survey 2015 Five Year Estimates

Here's the same map, but showing only the city of Cleveland. It also shows the locations of those City VRAD cabinet permits we mentioned above.

MAP 2: AT&T's Fiber To The Node network buildout in the city of Cleveland was concentrated in midde-income neighborhoods, as evidenced not just by FCC data but also by City permits issued for VRAD cabinets. The buildout bypassed the entire northeast side and most of the near West Side.



Sources: FCC Form 477 block data for June 2016 | American Community Survey 2015 Five Year Estimates | City of Cleveland VRAD permits provided to CYC via public records request

The implications of these maps should be self-evident, especially to anyone who's familiar with the Cleveland area and its neighborhoods. But to spell them out:

-Most of Cuyahoga County's suburban communities are fully covered by AT&T's mainstream FTTH/VDSL service. Most of the city of Cleveland is not.

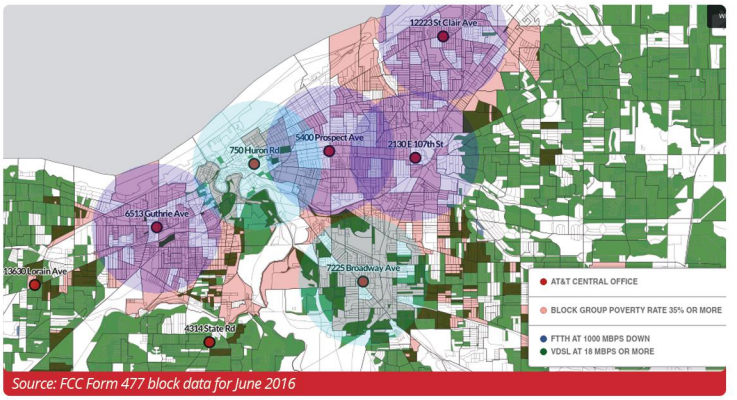
-For those who prefer numbers to visuals: Not counting vacant industrial blocks and Hopkins airport, the new Form 477 data lists 13,457 Census blocks in Cuyahoga County served by AT&T with ADSL2, VDSL, or FTTH service. Of the 5,567 blocks located in the city of Cleveland, just 34% (1,904) have their Maximum Advertised Download Speeds provided by VDSL or FTTH. Of the 7,890 blocks in the rest of the county, the VDSL/FTTH percentage is 61%.

-Within the city, the Census blocks served by AT&T's FTTN/VDSL infrastructure — those where neighborhood fiber and VRAD cabinets have been deployed — are concentrated in relatively middle-income neighborhoods in the far Southwest and Southeast sides, Old Brooklyn, the outermost blocks of North Collinwood, Shaker Square, etc. Except for that sliver of North Collinwood, there's not a single VRAD location in the entire northeast quadrant of the city — in Central, Fairfax, Hough, Glenville, St. Clair-Superior, or South Collinwood. No FTTN infrastructure has been installed in Buckeye-Woodland, Union-Miles, Detroit-Shoreway, Ohio City, Stockyards or Clark-Fulton.

-There's a glaring correlation between areas where AT&T has not invested in FTTN service and areas of high poverty.

MAP 3: AT&T apparently chose not to install Fiber To The Node infrastructure anywhere in the areas served by its four Cleveland central offices with the greatest concentration of high-poverty neighborhoods.

The absence of FTTN in these lower-income neighborhoods, and the overall disparity in FTTN deployment between Cleveland and the suburbs, can be traced largely to AT&T's failure to deploy FTTN anywhere in the service areas of four "central offices" (COs, or wire centers) with large lower-income customer bases: those at 6513 Guthrie, 5400 Prospect, 2130 East 107th, and 12223 St. Clair.

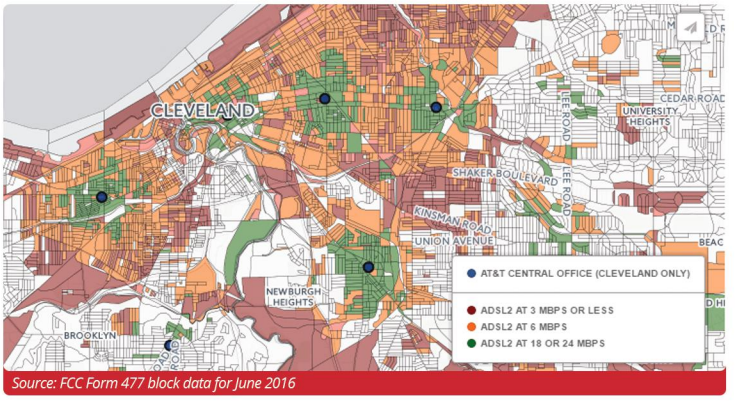


Source: FCC Form 477 block data for June 2016

As you can see, FTTN deployment is also very limited in the service area of the CO at 7225 Broadway, which serves another high-poverty neighborhood.

Because AT&T hasn't chosen to invest in FTTN infrastructure in these central office service areas, their neighborhoods must depend for AT&T Internet access on ADSL2 technology — data transmitted from the central office via copper wires. For some residents near the COs, that's not so bad. For those at greater distances... well, here's the map.

MAP 4: Where AT&T has not deployed FTTN technology, home Internet speeds delivered by the ADSL2 network vary widely depending on proximity to a central office. Maximum download speeds of 3 mbps or less are common.



Source: FCC Form 477 block data for June 2016

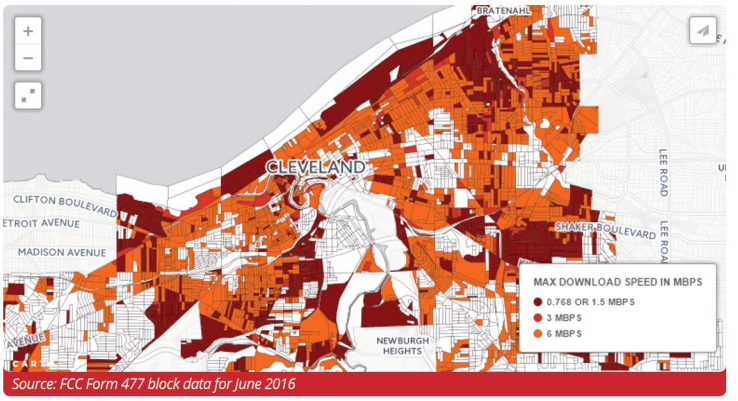
(Please note: Just because Form 477 says a Census block has an ADSL2 "Maximum Advertised Download Speed" of 18 mbps, don't assume that every household in that block can get that speed. That "maximum" speed could be available to just one or two addresses in the block, with slower speeds for all others. And "advertised speed" is a tricky term for AT&T, whose three lowest advertised speed tiers — and price levels — are now "up to 3 mbps", "up to 6 mbps", and "up to 24 mbps". If the best you can get is 768 kbps, your service is officially "up to 3 mbps"; if your available download speed is really 12 mbps, it's officially "up to 24 mbps" on your bill. What's green on the map is not necessarily that fast for real-life users.)

And finally, to make the impact of AT&T's deployment policies on Cleveland neighborhoods crystal clear, here's one final map: all the Census blocks in the city whose maximum AT&T download speeds for either VDSL or ADSL2 technology were 6 mbps or less in June 2016.

MAP 5: Cleveland Census blocks with maximum AT&T wireline Internet speeds of 6 mbps or less, June 2016

22% of Cleveland Census blocks were reported by AT&T to have maximum residential download speeds of 3 mbps or less. 55% had maximum download speeds no greater than 6 mbps.

The comparable percentages for the rest of Cuyahoga County were 12% and 24%, respectively.



Source: FCC Form 477 block data for June 2016

CONCLUSION

The maps above are based on AT&T's own data, submitted to the FCC and represented as accurate for June 2016, just nine months ago.

They show a clear and troubling pattern: A pattern of long-term, systematic failure to invest in the infrastructure required to provide equitable, mainstream Internet access to residents of the central city (compared to the suburbs) and to lower-income city neighborhoods.

When lending institutions have engaged in similar policies and practices, our communities haven't hesitated to call it "redlining".

We see no reason to hesitate to call it "digital redlining" in this case.

The National Digital Inclusion Alliance is a unified voice for home broadband access, public broadband access, personal devices and local technology training and support programs. We work collaboratively to craft, identify and disseminate financial and operational resources for digital inclusion programs while serving as a bridge to policymakers and the general public. NDIA is a program of the PAST Foundation.

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